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A-71673

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re application of:

MICHAEL R. LAYTON, ET AL.

Serial No. 10/633,368

Filed: July 31, 2003

For: SHOCK-RESISTANT ENCLOSURE

Examiner: Amy Jo Sterling

Group Art Unit: 3632

January 31, 2007

TRANSMITTAL OF CORRECTED APPEAL BRIEF

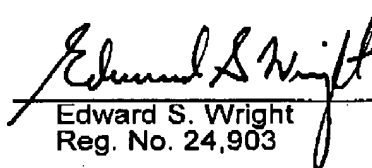
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In reply to the communication mailed January 18, applicant is submitting a corrected appeal brief. This brief differs from the original brief in that the sections pertaining to related patents and applications and to the grouping of claims have been deleted.

The filing fee for the brief has already been paid, and the Commissioner is authorized to charge any additional fees, including extension fees, or to credit any overpayment to Deposit Account 50-2975, Order No. A-71673.

Respectfully submitted,


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CERTIFICATE OF FACSIMILE TRANSMISSION

I CERTIFY THAT THE ATTACHED APPEAL BRIEF (Corrected) IS BEING FORWARDED TO THE PATENT OFFICE FOR FILING VIA FACSIMILE TRANSMISSION TO (571) 273-8300 ON January 31, 2007.


EDWARD S. WRIGHT

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**BRIEF ON APPEAL
(Corrected)**

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**RECEIVED
CENTRAL FAX CENTER****JAN 31 2007****REAL PARTY IN INTEREST**

The real party in interest is BEI Technologies, Inc., a Delaware corporation with its principal place of business in San Francisco, California, to whom the application has been assigned.

RELATED APPEALS AND INTERFERENCES

None.

STATUS OF CLAIMS

The application was originally filed with Claims 1 - 29. In response to an election of species requirement, filed September 23, 2005, Claims 30 - 35 were added, and Claims 1 - 3, 5 - 23 and newly added Claims 30 - 35 were elected for examination in the application. In an amendment filed March 28, 2006, Claims 1, 2, 5, 6, 10, 12, 22, and 32 were amended, and Claim 3 was cancelled. Claims 4, 13, 15, 16 and 26 - 31 have been withdrawn from consideration.¹ Currently, no claims stand allowed, and Claims 1, 2, 5 - 14, 17 - 25, and 32 - 35 are on appeal

STATUS OF AMENDMENTS

No amendments have been filed since the appeal was taken.

SUMMARY OF CLAIMED SUBJECT MATTER

The claims on appeal are directed to a shock-resistant enclosure for use in devices with fragile components such as solid state angular rate sensors and the like.

As defined by Claim 1 and illustrated in Figure 1, the shock-resistant enclosure comprises a housing 11 to which a fragile element (not shown) is rigidly mounted (Page 3, lines 8 - 13), and a plurality of discrete shock absorbing elements 18, 19, 21, 22, 32, 33 projecting outwardly in different directions from the housing for receiving impacts which would otherwise strike the housing from the outside (Page 3, line 18 to Page 4, line 3; Page 4, line 23 to Page 5, line 4), with at least some of the shock absorbing elements 32, 33 being formed integrally with the housing and of the same material as the housing (Page 5, lines 1 - 4).

As defined by Claim 10 and illustrated in Figures 1 and 2, the shock-resistant enclosure comprises a housing 11 having base and cover sections 12, 13 (Page 1, lines 6 - 8 and lines 14 - 15), and a combined sealing gasket and shock absorbing structure 16 formed integrally of an elastomeric material with a generally planar sealing portion 17 disposed between the base and cover sections 12, 13 of the housing 11 and a plurality of discrete shock absorbing elements 18, 19, 21, 22 extending outwardly from the sealing portion 17, and projecting from different sides of the housing 11 (Page 3, lines 23 - 27),

¹Applicant assumes that nonelected Claims 24 - 25 are also withdrawn even though they were not included in the list of claims withdrawn in the final action.

with at one of the elements 22 projecting from the housing 11 in a direction substantially perpendicular to the plane of the sealing portion 17 (Page 4, lines 1 - 3).

As defined by Claim 19 and illustrated in Figure 1, the shock-resistant housing comprises a housing 11 to which a fragile element (not shown) is rigidly mounted (Page 3, lines 8 - 13), a mounting pad 31 which projects from the housing (Page 4, line 23), and a shock absorbing fender 32 spaced laterally from the mounting pad for receiving impacts which would otherwise strike the mounting pad 31 (Page 4, lines 24 - 27; Page 5, lines 13 - 14).

As defined by Claim 24 and illustrated in Figure 1, the shock-resistant housing comprises a housing 11 to which a fragile element (not shown) is rigidly mounted (Page 3, lines 8 - 13), and a plurality of leaf springs 32 formed integrally with and extending from the housing for receiving impacts that would otherwise strike the housing (Page 4, line 23 to Page 5, line 10).

GROUND OF REJECTION

Claims 1 - 3, 6 - 12, 17 - 20 and 32 have been rejected under 35 U.S.C. §103 as being unpatentable over Ribeiro (U.S. 6,454,250) in view of Clucas et al. (U.S. 6,525,431).²

Claims 1, 5, 10 and 14 have been rejected under 35 U.S.C. §103 as being unpatentable over Crockett (U.S. 5,550,712) in view of Clucas et al.

Claims 1, 19, 21 - 23, and 32 - 35 have been rejected under 35 U.S.C. §103 as being unpatentable over Albrecht et al. (U.S. 6,034,841) in view of Clucas et al..

ARGUMENT

Claims 1 - 3, 6 - 12, 17 - 20 and 32

The rejection of Claims 1 - 3, 6 - 12, 17 - 20 and 32 as being unpatentable over Ribeiro in view of Clucas et al. is based on a misinterpretation of Ribeiro and a combination of selected features from non-analogous art which is totally lacking in motivation and will not even lead to the invention.

Claim 1 calls, *inter alia*, for a plurality of discrete shock absorbing elements projecting outwardly in different directions from a housing for receiving impacts which would otherwise strike the housing from the outside, with at least some of the shock absorbing elements being formed integrally with the housing and of the same material as the housing. As her primary reference, the Examiner has cited Ribeiro as showing a plurality of integrally formed elastomeric discrete shock absorbing elements 54 having

²Claim 3 has been cancelled and should not have been included in the rejection.

sides 74, 76 which project outwardly in different directions and shock absorbing elements 62 which are formed integrally of the housing and of the same material as the housing. There is only one element 54 (which Ribeiro calls "an elastomeric member", and its purpose is to absorb forces between the upper and lower housing sections 58, 56, not to receive impacts which would otherwise strike the housing. Member 54 does not extend or project from the housing at all. Instead, it is sandwiched between the peripheral side walls of the two housing sections. Elements 74, 76 are the sides of the elastomeric member, and, as such, they are sandwiched between the two sections of the housing, rather than projecting from it. See Figure 4 in which the housing is shown upside down, with the lower section on top and the upper section on the bottom. As best seen at the edges of the opening on the right side of the structure as shown in that figure, the side walls of the upper section have a relatively thin inner lip which is received in a groove 86 on the upper side of the elastomeric member (see Figure 5), with the outer surfaces of the elastomeric member being flush with the outer surfaces of the side walls of the two housing sections, with nothing projecting beyond the housing walls.

The element 62 characterized by the Examiner as "shock absorbing elements" is actually the upper portion of the lower section 56 of the housing, and it appears to be of the same construction as the rest of the section. There is nothing whatsoever to support the Examiner's characterization of it as being a shock absorbing element. It is part of the housing, the interior of the housing extends into it, and an impact with it is an impact with the housing.

Clucas et al. pertains to a co-generation system for producing heat, hot water and electricity for a building, and the elements 32 characterized by the Examiner as shock-absorbing elements made from plastic are actually coil springs which support the burner 9 of a Stirling engine 8. Suggesting the use of the springs from a Stirling engine as shock absorbers for the keypad housing shown in Ribeiro is not only totally lacking in motivation, it is ludicrous. In suggesting the combination, the Examiner cites Clucas et al. as teaching a housing with shock absorbing elements made from plastic because it is an inexpensive material, then argues that it therefore would have been obvious to use plastic. That argument is based on a false premise. Clucas et al. does not teach the use of plastic because it is inexpensive, and even if it did, that would not suggest the use of coil springs as elements which project outwardly in different directions from a housing for absorbing impacts which would otherwise strike the housing from the outside. Nor would it suggest forming such elements integrally with the housing.

Thus, Claim 1 distinguishes over Ribeiro and Clucas et al. in calling for a plurality of discrete shock absorbing elements projecting outwardly in different directions from a housing for receiving impacts which would otherwise strike the housing from the outside, with at least some of the shock absorbing elements being formed integrally with

the housing and of the same material as the housing, and is clearly directed to patentable subject matter.

Claims 2, 6 - 9 and 32 depend from Claim 1 and distinguish over Ribeiro for the same reasons as their amended parent claim. In addition, they call for additional elements which are not found in Ribeiro.

Claim 2, for example, further distinguishes in specifying that some of the shock absorbing elements are fabricated of an elastomeric material affixed to the housing.

Claim 6 further distinguishes in specifying that some of the shock absorbing elements are formed integrally with a gasket which seals two sections of the housing together.

Claim 7 further distinguishes in specifying that at least some of the shock absorbing elements extend beyond a mounting surface of the housing and are adapted to deflect so as not to prevent the mounting surface from making direct contact with a surface on which the enclosure is installed. Such elements are neither found in the references nor addressed by the Examiner.

Claim 8 further distinguishes in calling for a mounting pad which projects from the housing, and a shock absorbing fender spaced laterally from the mounting pad. The element (62) characterized by the Examiner as a mounting pad is not a mounting pad which projects from the housing, but simply is the upper portion of the lower section of the housing. Moreover, there are no fenders which are spaced laterally from anything in Ribeiro, let alone a mounting pad.

Claim 9 depends from Claim 8 and distinguishes even further in specifying that the mounting pad and the fender are formed integrally with the housing.

Claim 32 further distinguishes in specifying that the shock absorbing elements include shock absorbing fenders which extend around and are spaced from corner portions of the housing for receiving impacts that would otherwise strike the housing. There are no such fenders in either Ribeiro or Clucas et al.

Claim 10 defines the shock-resistant enclosure as comprising a housing having base and cover sections, and a combined sealing gasket and shock absorbing structure formed integrally of an elastomeric material with a generally planar sealing portion disposed between the base and cover sections of the housing and a plurality of discrete shock absorbing elements extending outwardly from the sealing portion and projecting from different sides of the housing, with at one of the elements projecting from the housing in a direction substantially perpendicular to the plane of the sealing portion. In so doing, it clearly distinguishes over Ribeiro and Clucas et al. Because, as discussed above, no shock absorbing elements extend outwardly and project from different sides of the housing in Ribeiro, and none project in a direction perpendicular to the plane of the elastomeric member 54. Such structure is not even remotely suggested by Clucas et al. either.

Claims 11 - 12 and 17 - 18 depend from Claim 10 and are directed to patentable subject matter for the same reasons as their amended parent claim. In addition, they call for additional elements which are not found in the references.

Claim 11 further distinguishes in specifying that the shock absorbing elements are connected to the sealing portion by runners which are embedded in the walls of the housing, and Claim 12 specifies that the runners are embedded in recesses near the corners of the housing and held in place by cornerpieces retained by fasteners that also hold the base and cover sections of the housing together. Neither the runners nor the cornerpieces are found in or even remotely suggested by the references.

Claim 17 further distinguishes in calling for a mounting pad which projects from the housing and a shock absorbing fender spaced laterally from the mounting pad. Claim 18 depends from Claim 17 and further specifies that the mounting pad and the fender are formed integrally with the housing. There is neither a mounting pad nor a fender in Ribeiro or Clucas et al., let alone one which is formed integrally with the housing.

Claim 19 defines the shock-resistant enclosure as comprising a housing to which a fragile element is rigidly mounted, a mounting pad which projects from the housing, and a shock absorbing fender spaced laterally from the mounting pad for receiving impacts which would otherwise strike the mounting pad. It distinguishes over Ribeiro and Clucas et al. in calling for the mounting pad which projects from the housing and the shock absorbing fender spaced laterally from the mounting pad for receiving impacts which would otherwise strike the mounting pad. As discussed above, neither reference teaches or even remotely suggests either a mounting pad which projects from a housing or a shock absorbing fender spaced laterally from the mounting pad for receiving impacts which would otherwise strike the mounting pad.

Claim 20 depends from Claim 19 and further distinguishes in specifying that the mounting pad and the fender are formed integrally with the housing. Neither reference shows or suggests this structure either.

Claims 1, 5, 10 and 14

Claims 1, 5, 10 and 14 have been rejected under 35 U.S.C. §103 as being unpatentable over Crockett (U.S. 5,550,712) in view of Clucas et al.

Claim 1 distinguishes over these references in calling for a housing to which a fragile element is rigidly mounted, and a plurality of discrete shock absorbing elements projecting outwardly in different directions from the housing for receiving impacts which would otherwise strike the housing from the outside, with at least some of the shock absorbing elements being formed integrally with the housing and of the same material as the housing.

Contrary to the Examiner's suggestion, neither reference shows a fragile element rigidly mounted to a housing. Element 14 in Crockett, characterized by the Examiner as a fragile element, is actually a printed circuit board which is mounted to the housing by isolation members or grommets²² made of an elastomeric material. This is one form of a flexible system which is discussed in the background section of applicant's disclosure and which the invention is specifically intended to improve upon.

Moreover, the so-called bumper seal 17 of Crockett extends only about the lateral periphery of the housing and provides no protection from shocks impinging from any direction other than the plane of the bumper itself. Neither reference shows or suggests shock absorbing elements being formed integrally with the housing and of the same material as the housing.

Claim 5 depends from Claim 1 and further specifies that some of the shock absorbing elements are tapered and decrease in cross-sectional area away from the housing. Contrary to the Examiner's suggestion, the bead structure 17 shown in Crockett is rounded, not tapered.

Claim 10 distinguishes over Crockett and Clucas et al. in calling for a housing having base and cover sections, and a combined sealing gasket and shock absorbing structure formed integrally of an elastomeric material with a generally planar sealing portion disposed between the base and cover sections of the housing and a plurality of discrete shock absorbing elements extending outwardly from the sealing portion and projecting from different sides of the housing, with at one of the elements projecting from the housing in a direction substantially perpendicular to the plane of the sealing portion. As noted above, the so-called bumper seal 17 of Crockett extends only about the lateral periphery of the housing and provides no protection from shocks impinging from any direction other than the plane of the bumper itself. There element which projects in a direction perpendicular to that plane.

Claim 14 depends from Claim 10 and is directed to allowable subject matter for the same reasons as its amended parent claim. In addition, it further specifies that the shock absorbing elements are tapered and decrease in cross-sectional area away from the housing. As noted above, the tapered elements are not found in the references.

Claims 1, 19, 21 - 23, and 32 - 35

Contrary to the Examiner's suggestion, Albrecht et al. does not have either mounting pads which project from the housing or shock absorbing fenders which extend around and are spaced laterally from the corners of the housing or from mounting pads. The unnumbered element which the Examiner has labeled as a mounting pad in the drawing reproduced in the final action is not a mounting pad at all, and it does not project

from the housing. It is a threaded post or boss which receives the screws which hold the top and bottom covers on bottom base 10. See Col. 3, lines 19 - 22.

The corner bumpers 80 shown in Figure 9 of Albrecht et al. are separate pieces that slide over the corner posts and are held in place by the cover plates. They are not formed integrally with the housing, the sealing gaskets which go between the covers and the bottom base, or with each other.

Claim 1 distinguishes over Albrecht et al. and Clucas et al. in calling for a housing to which a fragile element is rigidly mounted, and a plurality of discrete shock absorbing elements projecting outwardly in different directions from the housing for receiving impacts which would otherwise strike the housing from the outside, with at least some of the shock absorbing elements being formed integrally with the housing and of the same material as the housing. That structure is neither found in nor suggested by the references.

Claim 19 distinguishes over Albrecht et al. and Clucas et al. in calling for a shock-resistant enclosure, comprising a housing to which a fragile element is rigidly mounted, a mounting pad which projects from the housing, and a shock absorbing fender spaced laterally from the mounting pad for receiving impacts which would otherwise strike the mounting pad. As pointed out above, Albrecht et al. discloses neither a mounting pad which projects from a housing nor a shock absorbing fender spaced laterally from a mounting pad, and neither does Clucas et al.

Claims 21 - 23 depend from Claim 19 and distinguish over Albrecht et al. And Clucas et al. for the same reasons as their parent claim. In addition, they call for additional features which are not found in the references.

Claim 21 further specifies that the fender includes a lug which extends beyond a surface of the mounting pad for receiving impacts which might otherwise strike the surface of the pad, Claim 22 specifies that the housing, the mounting pad, and the fender are fabricated of a plastic material, and Claim 23 further specifies that the mounting pad is generally circular and the fender is generally C-shaped.

Claims 32 - 35 depend from Claim 1 and distinguish over Albrecht et al. and Clucas et al. for the same reasons as their amended parent claim. They, too, call for additional features which are not found in the references.

Claim 32 further specifies that at least some of the shock absorbing elements are shock absorbing fenders which extend around and are spaced from corner portions of the housing for receiving impacts that would otherwise strike the housing. Claim 33 further specifies that the fenders are formed integrally with the housing, Claim 34 specifies that the housing and the fenders are fabricated of a plastic material, and Claim 35 further specifies that the fenders include lugs which extend beyond a side of the housing bounded by the corner portions. These features are neither found in nor suggested by the references.

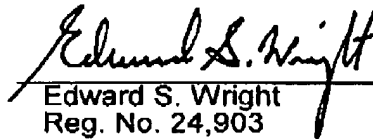
SUMMARY AND CONCLUSION

It is respectfully submitted that the rejections which the Examiner has made cannot be sustained and that the action of the Examiner should be reversed.

Deposit Account Authorization

The Commissioner is authorized to charge any fees required in this matter, including extension fees to Deposit Account 50-2975, Order No. A-71676.

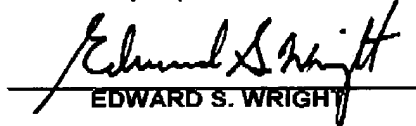
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CERTIFICATE OF FACSIMILE TRANSMISSION

I CERTIFY THAT THIS BRIEF ON APPEAL IS BEING FORWARDED TO THE PATENT OFFICE FOR FILING VIA FACSIMILE TRANSMISSION TO (671) 273-8300 ON January 31, 2007.


EDWARD S. WRIGHT

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The Claims on Appeal

1. A shock-resistant enclosure, comprising a housing to which a fragile element is rigidly mounted, and a plurality of discrete shock absorbing elements projecting outwardly in different directions from the housing for receiving impacts which would otherwise strike the housing from the outside, with at least some of the shock absorbing elements being formed integrally with the housing and of the same material as the housing.

2. The shock-resistant enclosure of Claim 1 wherein some of the shock absorbing elements are fabricated of an elastomeric material affixed to the housing.

5. The shock-resistant enclosure of Claim 1 wherein some of the shock absorbing elements are tapered and decrease in cross-sectional area away from the housing.

6. The shock-resistant enclosure of Claim 1 wherein some of the shock absorbing elements are formed integrally with a gasket which seals two sections of the housing together.

7. The shock-resistant enclosure of Claim 1 wherein at least some of the shock absorbing elements extend beyond a mounting surface of the housing and are adapted to deflect so as not to prevent the mounting surface from making direct contact with a surface on which the enclosure is installed.

8. The shock-resistant enclosure of Claim 1 further including a mounting pad which projects from the housing, and a shock absorbing fender spaced laterally from the mounting pad.

9. The shock-resistant enclosure of Claim 8 wherein the mounting pad and the fender are formed integrally with the housing.

10. A shock-resistant enclosure, comprising a housing having base and cover sections, and a combined sealing gasket and shock absorbing structure formed integrally of an elastomeric material with a generally planar sealing portion disposed between the base and cover sections of the housing and a plurality of discrete shock absorbing elements extending outwardly from the sealing portion and projecting from different sides of the housing, with at one of the elements projecting from the housing in a direction substantially perpendicular to the plane of the sealing portion.

11. The shock-resistant enclosure of Claim 10 wherein the shock absorbing elements are connected to the sealing portion by runners which are embedded in the walls of the housing.

12. The shock-resistant enclosure of Claim 11 wherein the runners are embedded in recesses near the corners of the housing and held in place by cornerpieces retained by fasteners that also hold the base and cover sections of the housing together.

Appendix A

13. The shock-resistant enclosure of Claim 11 wherein the shock absorbing elements and runners are over-molded onto the housing, with the runners being embedded in recesses near the corners of the housing and thereby integrally attached to the housing.

14. The shock-resistant enclosure of Claim 10 wherein the shock absorbing elements are tapered and decrease in cross-sectional area away from the housing.

17. The shock-resistant enclosure of Claim 10 further including a mounting pad which projects from the housing, and a shock absorbing fender spaced laterally from the mounting pad.

18. The shock-resistant enclosure of Claim 17 wherein the mounting pad and the fender are formed integrally with the housing.

19. A shock-resistant enclosure, comprising a housing to which a fragile element is rigidly mounted, a mounting pad which projects from the housing, and a shock absorbing fender spaced laterally from the mounting pad for receiving impacts which would otherwise strike the mounting pad.

20. The shock-resistant enclosure of Claim 19 wherein the mounting pad and the fender are formed integrally with the housing.

21. The shock-absorbing enclosure of Claim 19 wherein the fender includes a lug which extends beyond a surface of the mounting pad for receiving impacts which might otherwise strike the surface of the pad.

22. The shock-resistant enclosure of Claim 19 wherein the housing, the mounting pad, and the fender are fabricated of a plastic material.

23. The shock-resistant enclosure of Claim 19 wherein the mounting pad is generally circular, and the fender is generally C-shaped.

32. The shock-resistant enclosure of Claim 1 wherein at least some of the shock absorbing elements are shock absorbing fenders which extend around and are spaced from corner portions of the housing for receiving impacts that would otherwise strike the housing.

33. The shock-resistant enclosure of Claim 32 wherein the fenders are formed integrally with the housing.

34. The shock-resistant enclosure of Claim 32 wherein the housing and the fenders are fabricated of a plastic material.

35. The shock-resistant enclosure of Claim 32 wherein the fenders include lugs which extend beyond a side of the housing bounded by the corner portions.

Appendix A

Appendix B - Copies of Evidence Submitted

None

Appendix C - Copies of Decisions in Related Appeals and Interferences

None

Appendices B and C